



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|----------------------------|-------------|----------------------|---------------------|------------------|
| 10/800,382 | 03/11/2004 | Wing Yu Leung | MST-1898-22D | 8847 |
| 22888 | 7590 | 11/21/2008 | EXAMINER | |
| BEVER HOFFMAN & HARMS, LLP | | | TORRES, JOSEPH D | |
| 2099 Gateway Place | | | | |
| Suite 320 | | | ART UNIT | PAPER NUMBER |
| San Jose, CA 95110 | | | 2112 | |
| | | | MAIL DATE | DELIVERY MODE |
| | | | 11/21/2008 | PAPER |

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

| | | | |
|------------------------------|------------------------|---------------------|--|
| Office Action Summary | Application No. | Applicant(s) | |
| | 10/800,382 | LEUNG ET AL. | |
| | Examiner | Art Unit | |
| | Joseph D. Torres | 2112 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 10 October 2008.
 2a) This action is **FINAL**. 2b) This action is non-final.
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1-4 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
 5) Claim(s) _____ is/are allowed.
 6) Claim(s) _____ is/are rejected.
 7) Claim(s) _____ is/are objected to.
 8) Claim(s) 1-4 are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.
 10) The drawing(s) filed on 02 August 2004 is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) Notice of References Cited (PTO-892)
 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
 3) Information Disclosure Statement(s) (PTO/SB/08)
 Paper No(s)/Mail Date _____.
 4) Interview Summary (PTO-413)
 Paper No(s)/Mail Date _____.
 5) Notice of Informal Patent Application
 6) Other: _____.

DETAILED ACTION

Specification

The disclosure is objected to because of the following informalities: The use of byte in the specification and the claims is ambiguous and indefinite since paragraph [0073] refers to bytes comprising 9-bits contrary to the standard meaning of the term. *Process Control Corp. v. HydReclaim Corp.*, 190 F.3d 1350, 1357, 52 USPQ2d 1029, 1033 (Fed. Cir. 1999).

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-4 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 recites, “A method for error detection and correction (EDC) in transferring data in a packet of bytes from a memory module to a requesting device” and “defining each byte of the packet to have an EDC code portion and a data portion, wherein each EDC code portion is a distributed portion of a complete EDC code”. It is not clear what is meant by “defining each byte of the packet to have an EDC code portion” since a packet P either has an ECC portion or it doesn't. the Examiner assumes the following: -- generating an EDC code portion for each byte of a packet so that each byte has a data

portion and an EDC portion, wherein each EDC code portion is a distributed portion of a complete EDC code --.

The use of byte in the specification and the claims is ambiguous and indefinite since paragraph [0073] refers to bytes comprising 9-bits contrary to the standard meaning of the term. *Process Control Corp. v. HydReclaim Corp.*, 190 F.3d 1350, 1357, 52 USPQ2d 1029, 1033 (Fed. Cir. 1999).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ragle; Herbert U. (US 4052698 A) in view of Sako; Yoichiro et al. (US 4788685 A).

35 U.S.C. 103(a) rejection of claim 1.

Ragle teaches generating an EDC code portion for each 9-bit byte of a packet so that each 9-bit byte has a data portion and an EDC portion, wherein each EDC code portion is a distributed portion of a complete EDC code (Figure 1 in Ragle teaches generating an EDC code portion P for each 9-bit byte B1-B8,P of a 7x8 word/packet so that each 9-bit byte has a data portion B1-B8 and an EDC portion P, wherein each EDC code portion P is a distributed portion of a complete EDC code for the 7x8 word/packet); storing said data portion and said EDC code portion of each 9-bit byte of the word/packet in the memory module (Figure 1 in Ragle teaches storing said data portion B1-B8 and said EDC code portion P of each 9-bit byte B1-B8,P of the word/packet in the magnetic tape memory module 102); reading out said data portion and said EDC code portion of each 9-bit byte of the word/packet from said memory module (Figure 1 in Ragle teaches reading out said data portion B1-B8 and said EDC code portion P of each 9-bit byte B1-B8,P of the word/packet from said memory module to Decoder 122); forwarding said data portion of each 9-bit byte of the word/packet read from the memory module to said requesting device (Figure 1 in Ragle teaches forwarding said data portion of each 9-bit byte B1-B8,P of the word/packet read from the magnetic tape memory module 102 to said requesting computer device 100); storing said EDC portion of each 9-bit byte of the word/packet read from the memory module (Figures 1 and 7 in Ragle teach storing said EDC portion P of each 9-bit byte B1-B8,P of the word/packet read from the magnetic tape memory module 102 to Buffer 300), and sending each said EDC portion to an EDC functional block when the complete EDC code is obtained (col. 10, lines 53-60 in Ragle teaches sending each said EDC portion P to an EDC functional

block comprising Blocks 302, 304, 306, 312, 314, 316, 320, 324 and 326 in Figure 7 of Ragle when the complete EDC code for a data group is obtained); copying said data portion of each byte of the packet read from the memory module (col. 10, lines 53-60 in Ragle teaches copying said data portion B1-B8 of each 9-bit byte B1-B8,P of the packet read from the magnetic tape memory module 102 to Buffer 300), and sending each said data portion to said EDC functional block (col. 10, lines 53-60 in Ragle teaches sending each said data portion B1-B8 to said EDC functional block comprising Blocks 302, 304, 306, 312, 314, 316, 320, 324 and 326 in Figure 7); and performing error checking and correction in said EDC functional block when said EDC functional block receives the complete EDC code (EDC Error Check functional block Unit comprising units 302,304, 306, 308, 310 and 318 in Figure 1 and 7 of Ragle performs error checking and correction in said EDC functional block when said EDC functional block receives a complete EDC code).

Note: the 8-character by 9-bit matrix comprising the 8 9-bit bytes of B1-B8,P data are modulated encoded by Encoder 110 in Figure 1 of Ragle to be stored in memory to ensure adequate transitions in the data for future reading. The Examiner has argued in the past that the modulation encoding is part of the storage means for data and that using a modulation means to store data does not alter the fact that the tape drive is used to store the 8-character by 9-bit matrix comprising the 8 9-bit bytes of B1-B8,P data. The Applicant has continued to argue that because the data storage device reformats the 8-character by 9-bit matrix comprising the 8 9-bit bytes of B1-B8,P data that the memory really does not store the 8-character by 9-bit matrix comprising the 8 9-

bit bytes of B1-B8,P data, but does not explain how the 8-character by 9-bit matrix comprising the 8 9-bit bytes of B1-B8,P data magically appears at the decoding side during read when it is read out of memory. OK fine. The Examiner introduces a new art that does teach the direct storage of a product code into a sector of memory. If this one is not satisfactory to the Applicant, please feel free to let the Examiner know as there are several hundreds other patents that can be combined that teach direct storage of a code to memory.

However Ragle does not explicitly teach the specific use of bypassing modulation encoder 110 in Ragle to store the 8-character by 9-bit matrix comprising the 8 9-bit bytes of B1-B8,P.

Sako, in an analogous art, teaches that the product code of Figure 5 is a sector format for data stored into a sector of memory.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Ragle with the teachings of Sako by including use of bypassing modulation encoder 110 in Ragle to store the 8-character by 9-bit matrix comprising the 8 9-bit bytes of B1-B8,P. This modification would have been obvious to one of ordinary skill in the art, at the time the invention was made, because one of ordinary skill in the art would have recognized that use of bypassing modulation encoder 110 in Ragle to store the 8-character by 9-bit matrix comprising the 8 9-bit bytes of B1-B8,P would have provided a storage means compliant with sector formatted data.

35 U.S.C. 103(a) rejection of claim 4.

Figure 1 in Ragle teaches that the complete data word packet is sent after error detection and correction is completed.

1. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ragle; Herbert U. (US 4052698 A) and Sako; Yoichiro et al. (US 4788685 A) in view of Brune; Werner et al. (US 3665393 A, hereafter referred to as Brune).

35 U.S.C. 103(a) rejection of claim 2.

Ragle substantially teaches the claimed invention described in claim 1 (as rejected above).

However Ragle does not explicitly teach the specific use of setting a flag and correcting said data; writing the correct data back to said memory module; and generating an interrupt to said requesting device for a later retransmission.

Brune, in an analogous art, teaches use of setting a flag (col. 4, lines 45 in Brune teach that Error Recognition Device 6 produces an output for flagging errors if an error is detected) and correcting said data (see Abstract in Brune); writing the correct data back to said memory module (col. 2 , lines 53-58 in Brune); and generating an interrupt to said requesting device for a later retransmission (col. 2 , lines 53-58 in Brune).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Ragle with the teachings of Brune by including use of setting a flag and correcting said data; writing the correct data back to said memory

module; and generating an interrupt to said requesting device for a later retransmission. This modification would have been obvious to one of ordinary skill in the art, at the time the invention was made, because one of ordinary skill in the art would have recognized that use of setting a flag and correcting said data; writing the correct data back to said memory module; and generating an interrupt to said requesting device for a later retransmission would have provided avoided cycle prolongation (col. 2, lines 60-61 in Brune).

2. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ragle; Herbert U. (US 4052698 A) and Sako; Yoichiro et al. (US 4788685 A).

35 U.S.C. 103(a) rejection of claim 3.

Ragle substantially teaches the claimed invention described in claim 1 (as rejected above).

However Ragle does not explicitly teach the same size of Data Structure in claim 3. The Examiner asserts that one of ordinary skill in the art at the time the invention was made would have known that error correction redundancy can be modified by reducing redundancy to increase bandwidth or increasing redundancy to provide more robust error correction. Ragle teaches all of the limitations of claim 1 for error correction and modifying the data structure in Ragle based on well known motivation in the art is obvious.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teachings of Ragle by including using the same size of Data Structure in claim 3. This modification would have been obvious to one of ordinary skill in the art, at the time the invention was made, because one of ordinary skill in the art would have recognized that using the same size of Data Structure in claim 3 would have provided increased bandwidth.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph D. Torres whose telephone number is (571) 272-3829. The examiner can normally be reached on M-F 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jacques Louis-Jacques can be reached on (571) 272-6962. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Joseph D. Torres
Primary Examiner
Art Unit 2112

/Joseph D. Torres/
Primary Examiner, Art Unit 2112